and external os and digital evaluation revealed a patent but short canal with no communication into uterine lumen. Hysteroscopy was performed and the cranial cervical canal failed to connect to uterine lumen. Fine spiderweb trabeculae of tissue traversed the area cranial to the cervix, consistent with subepithelial tissue that was distended with air. However, no uterine lumen and there was no evidence of normal endometrium. Chromosomal analysis of the mare revealed normal female karyotype. These findings are consistent with a congenital abnormality and canalization failure of a normal uterine lumen. In some cases, uterine exposure to caustic substances can result in this condition; however, this mare had also had normal endometrium. As diagnosed in this case, congenital malformation of the uterus (that prevented normal ability to carry a pregnancy) can be missed with routine evaluation.

Keywords: Mare, segmental aplasia, uterine and cervical hypoplasia, congenital abnormality

Ovine male pseudohermaphrodite with testes adjacent to mammary gland in a sheep

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Male pseudohermaphrodite sheep have been reported with variations in genotype and phenotype.[1] A Katahdin sheep was born as a triplet with 1 male and 1 female siblings. At birth, the sheep had what was considered normal ewe lamb phenotype. At 1.5 years of age the phenotype of the sheep described included a long-haired mane and heavy muscling. The lamb siblings developed normal ewe and ram phenotypes. The sheep's vulva had a prominent ventral bulge with increased hair and a prominent clitoris, consistent in appearance with a glans penis. Tip of the glans penis had a very short urethral process. The animal demonstrated behavior consistent with a male including protective 'ramming' and mounting of its pasture mates. Transabdominal ultrasonography could not confirm structures consistent with testicular parenchyma. Serum testosterone concentrations were 5.0 pg/ml. Based on the unwanted aggressive behavior, an exploratory laparoscopy was performed in an attempt to identify any testicular tissue, and if present, remove it. Exploratory laparoscopy revealed bilateral tubular structures consistent with the vas deferens originating from the inguinal canal and reaching the dorsal aspect of the urinary bladder. External palpation identified 2 ovoid structures (~ 5 x 3 cm) located between mammary tissue and body wall. Skin consistent with scrotal skin (wrinkled and slightly red) was observed in bilateral regions 2 cm in diameter caudal to the mammary gland. These 2 structures were removed via a 3 cm incision made lateral to the mammary tissue. Histopathology revealed testicular tissue with abortive spermatic tubules, lined by Sertoli cells without germinal cells, and bilateral suppurative epididymitis. No female gonadal tissue was identified by light microscopy. Karyotype revealed a mixed population of genetically female 54, XX (80%), and male XY (20%) lymphocytes. This may indicate blood chimerism or true somatic mosaicism and DNA analysis from an ear punch is pending. A case of an unusual location of extra-abdominal but undescended testes in a male pseudohermaphrodite Katahdin sheep is described.

Keywords: Male pseudohermaphrodite, sheep, bilateral epididymitis, triplets

Reference

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Effect of hyaluronic acid on fresh-cooled extended equine semen: sperm motility

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Hyaluronic acid (HA) is a glycosaminoglycan, has a role in in vitro sperm-oocyte binding and exerts antioxidant properties.[1,2] Conflicting results regarding the benefit of addition of HA to freezing extender on postthaw motility exist.[2] This study determined whether addition of sodium hyaluronate (Hytryl®, 10 mg/ml, KineticVet, Lexington, KY) at varying concentrations to 2 milk-based extenders affected motility parameters of fresh-cooled equine semen stored at 5°C for up to 72 hours. We hypothesized that the addition of Hytryl®, 10 mg/ml to fresh-cooled equine semen increases total and/or progressive motility, benefitting the longevity and quality of equine fresh-cooled semen. Ejaculates from 8 stallions were extended in either INRA (IMV Technologies, IMV Technologies, L'Aigle, France) or CST (Animal Reproduction Systems, Chino, CA) with no or differing concentrations of Hytryl® at 0, 100, and 1,000 µg/ml. The samples were stored in a passive cooling device (EquiSaver, IntegriTemp, Omaha, NE) and cooled to 5°C for up to 72 hours and aliquots were incubated at 37°C for 5 - 10 minutes prior to motility evaluations with a computer assisted sperm analysis (CASA; SpermVision®, Minitube, Verona, WI). Sperm motility of each treatment group was compared at time 0, 24, 48, and 72 hours postcollection. Means of total and progressive motility parameters were subjected to the mixed procedure of SAS® for statistical analysis. Means were compared using Tukey's range test at a significance level of alpha = 0.05. There were no significant differences in total or progressive motility